What Is Claimed Is:

Sub A1

1. A method of making light emitting diodes having a transparent substrate comprising:

forming an n-GaN layer on a first side of the transparent substrate;

forming an active layer on the n-GaN layer;

forming a p-GaN layer on the active layer;

forming a p-electrode on the p-GaN layer;

forming an n-electrode on the n-GaN layer;

forming a reflective layer on a second side of the transparent substrate; and

forming a scribe line on the transparent substrate.

2. The method according to claim 1, wherein the scribe line formed on the first side of the transparent substrate.

3. The method according to claim 2, wherein the scribe line forms an indentation on a surface of the transparent substrate.

4. The method according to claim 3, wherein the indentation has a triangular shape.

5. The method according to claim 1, further comprising forming a buffer layer between the transparent substrate and the n-GaN layer.

6. The method according to claim 5, wherein the scribe line penetrates the buffer layer and forms an indentation on a surface of the transparent substrate.

7. The method according to claim 1, wherein the scribe line is on the second side of the transparent ~~layer~~ substrate.

8. The method according to claim 7, wherein the scribe line penetrates the reflective layer and forms an indentation on a surface of the transparent substrate.

9. The method according to claim 8, wherein the indentation has a triangular shape.

10. The method according to claim 1, wherein a space between two diodes formed by the scribe line is about 10μm.

11. The method according to claim 1, wherein a space between two diodes formed by the scribe line is less than 10μm.

12. The method according to claim 1, wherein the scribe line is formed by dry etching.

13. The method according to claim 1, wherein the scribe line is formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

14. A method of making light emitting diodes having a substrate comprising:

forming an n-type layer and a p-type layer on the substrate;

forming an active layer between the n-type layer and the p-type layer;

forming a first electrode contacting the p-type layer;

forming a second electrode contacting the n-type layer;

forming a reflective layer on the substrate; and

forming a scribe line on the substrate.

15. The method according to claim 14, wherein the scribe line is on a side of the substrate opposite the reflective layer.

16. The method according to claim 15, wherein the scribe line forms an indentation on a surface of the substrate.

17. The method according to claim 14, further comprising forming a buffer layer between the substrate and the n-type layer.

18. The method according to claim 17, wherein the scribe line penetrates the buffer layer and forms an indentation on a surface of the substrate.

19. The method according to claim 18, wherein the indentation has a triangular shape.

20. The method according to claim 14, wherein the scribe line is on a side of the reflective layer.

21. The method according to claim 20, wherein the scribe line penetrates the reflective layer and forms an indentation on a surface of the substrate.

22. The method according to claim 21, wherein the indentation has a triangular shape.

23. The method according to claim 14, wherein a space between two diodes formed by the scribe line is about 10μm.

24. The method according to claim 14, wherein a space between two diodes formed by the scribe line is less than 10μm.

25. The method according to claim 14, wherein the scribe line is formed by dry etching.

26. The method according to claim 14, wherein the scribe line is formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

27. A method of making multiple diodes comprising:

forming an active layer over a transparent substrate, the active layer generating photons; and

forming a reflective layer on the transparent substrate to reflect the photons from the active layer; and

forming scribe lines on the transparent substrate to separate the multiple diodes using inductively coupled plasma (ICP) reactive ion beam etching (RIE).

28. The method according to claim 27, wherein a space between two diodes formed by one of the scribe lines is about $10\mu m$.

29. The method according to claim 27, wherein a space between two diodes formed by one of the scribe lines is less than $10\mu m$.

30. The method according to claim 27, wherein the scribe lines are formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

31. A method of making a plurality of light emitting diodes having a transparent substrate comprising:

forming an n-GaN layer having a first doping concentration on a first side of the transparent substrate;

forming an InGaN active layer on the n-GaN layer, the active layer having an In concentration in a first range;

forming a p-GaN layer having a second doping concentration on the InGaN active layer;

forming a p-type contact layer on the p-GaN layer;

forming an n-type contact layer on the n-GaN layer by etching the p-type contact layer, p-GaN layer and the InGaN active layer;

reducing a thickness of the transparent substrate by backside lapping at a second side of the transparent substrate;

reducing a surface roughness of the transparent substrate;

forming a reflective layer on a reduced surface of the transparent substrate; and

forming scribe lines on one of the first and second sides of the transparent substrate to separate the plurality of diodes.

32. The method according to claim 31, wherein a space between two diodes formed by one of the scribe lines is about 10μm.

33. The method according to claim 31, wherein the space between two diodes formed by one of the scribe lines is less than 10μm.

34. The method according to claim 31, wherein the scribe lines are formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

35. A method of making a plurality of light emitting diodes having a substrate comprising:

forming a first epitaxial layer on a first surface of the substrate;

forming an active layer on the epitaxial layer;

forming a second epitaxial layer on the active layer;

forming a first electrode on the second epitaxial layer; and

forming a reflective layer on a second surface of the substrate; and

forming scribe lines on one of the first and second surfaces of the substrate to separate the plurality of diodes.

36. The method according to claim 35, wherein a space between two diodes formed by one of the scribe lines is about 10μm.

37. The method according to claim 35, wherein the space between two diodes formed by one of the scribe lines is less than 10μm.

38. The method according to claim 35, wherein the scribe lines are formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

39. A method of making a plurality of light emitting diodes comprising:

forming a first epitaxial layer on a first surface of a substrate, the substrate including a transparent layer and a second epitaxial layer on the transparent layer;

forming an active layer on the first epitaxial layer;

forming a third epitaxial layer on the active layer;

removing the transparent layer of the substrate;

forming a reflective layer on a second surface of the second epitaxial layer; and

forming a scribe line on one of the first and second surfaces of the substrate to separate the plurality of diodes.

40. The method according to claim 39, wherein a space between two diodes formed by one of the scribe lines is about $10\mu m$.

41. The method according to claim 39, wherein the space between two diodes formed by one of the scribe lines is less than $10\mu m$.

42. The method according to claim 39, wherein the scribe lines are formed by inductively coupled plasma (ICP) reactive ion beam etching (RIE).

43. The method according to claim 39, wherein the first surface of the substrate has an average surface roughness (Ra) of less than 30Å.

44. The method according to claim 39, wherein the second surface of the substrate has an average surface roughness of less than 30Å.

45. The method according to claim 39, wherein the first surface of the substrate has an Ra of less then 20Å.

46. The method according to claim 39, wherein the second surface of the substrate has an Ra of less than 20Å.

47. The method according to claim 39, wherein the first surface of the substrate has an Ra of less then 10Å.

48. The method according to claim 39, wherein the second surface of the substrate has an Ra of less than 10Å.

49. The method according to claim 1, wherein the first side of the substrate has an average surface roughness (Ra) of less than 30Å.

50. The method according to claim 1, wherein the second side of the substrate has an average surface roughness of less than 30Å

51. The method according to claim 1, wherein the first side of the substrate has an Ra of less then 20Å.

52. The method according to claim 1, wherein the second side of the substrate has an Ra of less than 20Å.

53. The method according to claim 1, wherein the first side of the substrate has an Ra of less then 10Å.

54. The method according to claim 1, wherein the second side of the substrate has an Ra of less than 10Å.

55. The method according to claim 14, wherein a surface of the substrate opposite the reflective layer has an average surface roughness (Ra) of less than 30Å.

56. The method according to claim 14, wherein a surface of the substrate at the side of the reflective layer has an average surface roughness of less than 30Å.

57. The method according to claim 14, wherein a surface of the substrate opposite the reflective layer has an Ra of less then 20Å.

58. The method according to claim 14, wherein a surface of the substrate at the side of the reflective layer has an Ra of less than 20Å.

59. The method according to claim 14, wherein a surface of the substrate opposite the reflective layer has an Ra of less then 10Å.

60. The method according to claim 14, wherein a surface of the substrate at the side of the reflective layer has an Ra of less than 10Å.

61. The method according to claim 27, wherein a surface of the substrate opposite the reflective layer has an average surface roughness (Ra) of less than 30Å.

62 The method according to claim 27, wherein a surface of the substrate at the side of the reflective layer has an average surface roughness of less than 30Å.

63. The method according to claim 27, wherein a surface of the substrate opposite the reflective layer has an Ra of less then 20Å.

64. The method according to claim 27, wherein a surface of the substrate at the side of the reflective layer has an Ra of less than 20Å.

65. The method according to claim 27, wherein a surface of the substrate opposite the reflective layer has an Ra of less then 10Å.

66. The method according to claim 27, wherein a surface of the substrate at the side of the reflective layer has an Ra of less than 10Å.

67. The method according to claim 31, wherein a surface of the first side of the substrate has an average surface roughness (Ra) of less than 30Å.

68. The method according to claim 31, wherein a surface of the second side of the substrate has an average surface roughness of less than 30Å.

69. The method according to claim 31, wherein a surface of first side of the substrate has an Ra of less then 20Å.

70. The method according to claim 31, wherein a surface of the second side of the substrate has an Ra of less than 20Å.

71. The method according to claim 31, wherein a surface of the first side of the substrate has an Ra of less then 10Å.

72. The method according to claim 31, wherein a surface of the second side of the substrate has an Ra of less than 10Å.

73. The method according to claim 35, wherein the first surface of the substrate opposite the reflective layer has an average surface roughness (Ra) of less than 30Å.

74. The method according to claim 35, wherein the second surface of the substrate at the side of the reflective layer has an average surface roughness of less than 30Å

75. The method according to claim 35, wherein the first surface of the substrate opposite the reflective layer has an Ra of less then 20Å.

76. The method according to claim 35, wherein the second surface of the substrate at the side of the reflective layer has an Ra of less than 20Å.

77. The method according to claim 35, wherein the first surface of the substrate opposite the reflective layer has an Ra of less then 10Å.

78. The method according to claim 35, wherein the second surface of the substrate at the side of the reflective layer has an Ra of less than 10Å.